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EXAMINER	
WOODS, ERIC V	
ART UNIT	**PAPER NUMBER**
2672	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/764,787	STAMM ET AL.	
	Examiner	Art Unit	
	Eric Woods	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

The objections to the drawings stand withdrawn in view of applicant's notation of support in the specification for them.

The objections to specification stand withdrawn in view of applicant's submission of a IDS under 37 CFR 1.97 and 1.98 covering the relevant material.

The objection to claim 11 is withdrawn in view of applicant's amendment.

In response to applicant's arguments, the recitations in the preamble of claim 20 that are different from that of claim 1 has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Claim Objections

Applicant is advised that should claim 18 be found allowable, claim 19 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing

one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 1-20 are objected to because of typographical errors. The cancellation of the word 'extrema' and its replacement with 'extremum' results in several cases where the improper article is used (a extremum, for example), where the plurality was intended to be used. Examiner will not spell check each claim for these deficiencies, but they must be found and corrected by applicant.

Claim 22 is objected to because it does not make sense, in that "using the simplified control data can to facilitate recognition of the graphical object" with the use of the word 'can'. Examiner will interpret the claim as lacking the word 'can' because otherwise it is unintelligible.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> **Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.**

Claims 12-19 are rejected under 35 U.S.C. 101 because they are directed to non-statutory subject matter and they lack utility. Firstly, the claims lack utility because they have no practical application.

The claims constitute non-statutory subject matter because they do not produce 'concrete, tangible, and practical' results, as required by *State St.* Next, the claims do not have any tangible pre- or post- computer activity. The claims consist entirely of operations within a computer. The operations manipulate abstract data, electrical signals representing data consisting of a graphical object and control points, to

determine certain details of commonality of control points and geometry. The claims do not improve the operating efficiency of the computer per se (*In re Lowry*), nor they do result in a more efficient computer generally (*In re Warmerdam*, and in any case *Warmerdam* would not suffice to protect the claims because they are directed to a method, not a computer containing a memory having a data structure). They do not produce results that are relied upon by regulatory authorities (*AT&T v. Excel Communications*) nor do they improve screen rendering or anti-aliasing (*In re Alappat*). In sum, the claims are completely non-statutory.

In order to expedite prosecution, and in anticipation of the applicant amending the claims to place them within the four statutory categories of subject matter, the claims rejected above under 35 USC 101 are further rejected under various statutes as below. This rejection was necessitated by applicant's amendments and there are no grounds for 1.181 to apply.

Claim Rejections - 35 USC § 112

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 21-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 does not make sense (with the use of the word 'can') and is thusly indefinite.

Claim 22 is rejected because the term 'facilitate recognition' has no art-recognized meaning in the specification, and it is unclear what is meant by it.

Claims 23 is rejected for not correcting the deficiency of its parent claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 7-8, 10-11, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander in view of Piper further in view of Takazawa (US 5,777,627).

Claim 20 is a computer program product implementing the method of claim 1. Clearly, software implementing a method that clearly is intended to be computer-implemented is subject to the same rejection without further comment. Therefore, since the references applied teach a computer-implemented method that would be inherently taught by those references. Finally, it would be obvious that a software program for making a computer execute a set of instructions is very clearly running on such a digital computer.

As to claim 1,

In a computing system that has access to a set of control points defining an outline of a graphical object, a method for simplifying the control data that represents the outline of the graphical object, the method comprising: (Again, preamble given no patentable weight, since it only recites an intended use – see specifics in *Hirao* as cited above. Preamble is not given patentable weight, since it only recites a summary of the claim and/or an intended use, and the process steps and/or apparatus components are capable of standing on their own; see Rowe v. Dror, 112 F.3d 473, 42 USPQ2d 1550 (Fed. Cir. 1997), Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999), and the like.*)*

-Identifying a plurality of local extrema on the outline of the graphical object; (Sander 2:20-57, where clearly the process identifies local extrema)(Piper clearly teaches that

local extrema – e.g. corners – are identified (1:30-47) so that straight line segments are identified)

-Identifying a plurality of sets of local extrema, each local extremum in a set of local extrema being on a common edge of the outline of the graphical object, each set of local extrema including one or more local extremum from the plurality of identified local extrema; (Sander 2:20-57, where clearly these extrema are identified, and a path with local extrema is shown in Fig. 4 (see 4:10-15), see also 5:30-45. In 5:45-6:30, particularly 6:10-30, the groups of extrema are divided by the process into smaller sets (e.g. a curve segment with local extrema is subdivided into multiple segments and this sort of thing, where clearly a curve segment constitutes a 'common edge of the outline of a graphic object,' since the object is defined by an outline, as in Fig. 4.) Further, these clear constitute a plurality of sets – e.g. the curve segments that make up the object are a plurality of objects, and these objects clearly have local extrema, and they are segmented accordingly, which clearly creates the recited plurality of sets of local extrema, since each set is subdivided after finding local extrema, which prima facie means that the parent sets must have contained a plurality of local extrema. Further, in Figure 7 and 7:40-57, it is clearly taught that a plurality of local extrema can exist within one segment and very clearly only one extrema is selected as representative since the multiple extrema fall within the user-defined tolerance band)(Also, Sander 6:38-52 clearly teaches that the number of points within a line segment is a design choice, which clearly means that multiple extrema can be included per set)

-Determining that control points interspersed between and/or at the local extremum of each set of local extrema are on a common edge of a simplified outline including when the control points are off of the outline of the graphical object; and (Piper clearly teaches the identification of control points on straight-line segments – see Figure 2, where the shown affine spline has two control points 15 and 16 that lie on the spline between end points 13 and 14 that are clearly extraneous and could be eliminated –see 2:25-40.)(Takazawa clearly teaches the use of curves, where the control points for such curves can be off the actual outlines, such (5:63-6:18) as Bezier curves and the like. Therefore, such points are well known to not necessarily be on the outline of the curve, but can be off of it, and are still included in the process (Figures 17-18, and 8:24-46)

-Generating simplified control data that represents an outline of the common edges of a simplified graphical object of the graphical object. Piper Figure 9 teaches that segments are evaluated and that where straight-line segments exist – e.g. the degenerated curves in Figure 6 for example – the intermediate control points are removed – see step 53, while for non-degenerated curved segments the intermediate control points are retained – step 52. As an example, see 2:40-60, where Figure 3 is discussed, where certain of the curved line segments have degenerated into straight line segments and as such, the intermediate control points are suitable to be removed. Clearly, this represents 'simplified control data' since the unnecessary curves are removed – see Abstract and 1:30-48.)(Sander Figure 7 clearly shows that multiple extrema can be within a tolerance band such that one is chosen as representative and the others are eliminated as extraneous – see 4:15-20 and 7:40-57)(Takazawa generates such modified control

points – see Figures 17 and 18, where in Figure 17 curve control points a1 – a4 (which are represented in data structures such as those shown in Figure 16) are to be simplified. The curve control points that need to be adjusted are only a3 and a4 versus all four control points. As such, this is more efficient and the speed of processing is enhanced (8:24-46). Also, such approximations are shown in Figures 29-31 (12:32-14:35))

Reference Sander teaches some of the limitations of the instant claim as set forth above, with the exception of certain details concerning how redundant control points are removed, which Piper teaches. The references are obviously analogous art since they are both directed to removing redundant control points from graphical objects as set forth in the instant claim. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sander with Piper since Piper creates a file format with the reduced number of control points and splines, which clearly takes less memory than the standard files, which would obviously be an improvement of Sander (See Piper abstract, 1:30-45 for example).

Reference Takazawa illustrates how curves in fonts are defined using control points, such as Bezier curves, which Sander uses (4:34-55, 6:57-7:40) but approximates as intermediate line segments (the number of which is specified by the user), and certain tolerance bands. Takazawa shows how the control points of the curves can be taken into account to minimize the necessary movement of control points during a shift of the font object. Clearly, the techniques of Takazawa could be used to simplify Bezier curve processing **before** the intermediate path points are generated,

which would speed up processing of the font variant (Takazawa 8:24-46). Therefore, it would be obvious to one of ordinary skill in the art to modify Sander to utilize the techniques of Takazawa before the intermediate data was generated and the font 'simplified.' The claims are written in such a way that the step of 'determining' can take place in a manner that utilizes the techniques of Takazawa before the path sections are actually segmented, thusly still meeting the limitation that the control points are off of the outline of the graphical object. In addition, Takazawa clearly fairly suggests that taking such control points into account and only moving the necessary ones is more efficient, which would therefore fairly suggest the same thing for the Sander reference.

As to claim 2,

The method as recited in claim 1, wherein identifying a plurality of local extrema on the outline of the graphical object comprises determining that the outline increases or decreases in the same direction at points adjacent to a point that is a prospective local extremum.

The Sander reference teaches this limitation in 2:10-40, where a local extrema is clearly defined to be a point in a curve with vertical or horizontal slope having portions of the path before and after the point positioned on the same side of a line tangent to the point. Clearly, this meets the recited definition, and it would have been obvious to find local extrema this way, because an extrema is by nature indicated by a change in direction of a curve as specified above. Since only the primary reference is utilized, motivation and combination is incorporated from the rejection to the parent claim.

As to claim 3,

The method as recited in claim 1, wherein identifying a plurality of local extrema on the outline of the graphical object comprises identifying a plurality of local extrema on the outline of a typographical character.

In Sander 1:40-45, a piece of software is listed as being able to generate paths. That piece of software is Aldus® Fontographer, which is well known to one of ordinary skill in the art to be software that allows a user to create fonts, which clearly consist of typographical characters, and the outline of such a character is essentially what a TrueType™ font or an Adobe Postscript Type 1 font consists of – that is, control points that define splines for the outline and fill of such a character. Piper clearly teaches in 1:10-25 the example of the letter "A" for reduction in the number of control points required, which is clearly an outline of a typographical character. Both references therefore teach this limitation. Motivation and combination are taken from the rejection to the parent claim.

As to claim 7,

The method as recited in claim 1, wherein identifying a plurality of sets of local extrema comprises determining that each local extremum in the plurality of local extrema is within a specified tolerance of immediately adjacent local extrema.

Piper teaches the use of a tolerance band (e.g. Figure 7), Piper clearly sets forth that since a majority of local extrema (e.g. the "a plurality" recited in the claim) are in the same direction (e.g. points 703, 705, and 707 versus the minority of points 704 and 706), point 705 is chosen as the representative middle point (7:40-56). Motivation and combination are incorporated by reference from the parent rejection.

As to claim 8,

The method as recited in claim 7, wherein determining that each local extremum in a plurality of local extrema is within a specified tolerance of immediately adjacent local extrema comprises determining that each local extremum in a plurality of local extrema is within specified distance tolerance of immediately adjacent local extrema.

As stated in the rejection to claim 7 above, and as substantiated in Piper 7:40-56, local extrema must fall within a tolerance band **of each other** as shown in Figure 7 to constitute an "extrema run" as defined in terms of distance. Clearly, this meets the required definition (e.g. the specification sets forth that 704-706 are extrema run between 703 and 707, although a close look at Figure 7 will show very clearly that all five points **fall within the tolerance band**. Therefore, it is obvious that 704 is within a tolerance band of 703, and that is what triggered the extrema run classification. The rejection to claim 7 is herein incorporated by reference for motivation and combination. Also, Takazawa teaches the use of control points as required above.

As to claim 10,

The method as recited in claim 1, wherein generating simplified control data that represents an outline of the common edges of the graphical object comprises generating a reduced set of control points, the reduced set of control points representing the features of the outline without representing some variations that would otherwise be included in the outline.

Clearly, Piper teaches that various control points within an extrema run / tolerance band are eliminated as redundant, as set forth above in the rejections to

claims 7, 8, and 9 and the like. Clearly, in Figure 7, if elements 704 and 706 are eliminated and only extrema 705 is retained, then these clearly constitute "variations that would otherwise be included in the outline" that are eliminated because the points are not exactly the same as the retained representative (middle) control point. Motivation and combination are taken from the parent rejection.

As to claim 11,

The method as recited in claim 1, wherein generating simplified control data that represents an outline of the common edges of the graphical object comprises generating simplified control data that represents an outline of the common edges a typographical character.

The rejection to claim 3 is incorporated herein by reference. Clearly, as stated therein, the paths recited can be a typographic character. The claim is essentially a duplicate. The rejection to claim 7 is also incorporated by reference, since it teaches eliminating control points and generating a simplified output format (see also the rejection to claim 1).

Claim 4 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander/Piper in view of Takazawa as applied to claim 1 above, and further in view of Scola et al (US 6,714,679 B1) and Foley – as cited in Piper 2:20-25 (copies of the requisite pages are included).

A cubic Bezier spline is known in the art to consist of four control points (see Piper Fig. 1 and 2:10-25. These control points are then used to generate a curved line

that consists of, and is representative of, three parametric cubic functions (see for example Foley 11.2, page 479). These cubic functions prima facie are of a higher order than 1, e.g. they have derivatives. Indeed, Foley on page 479 sets forth the parametric tangent vectors of the curves, which are prima facie the derivatives of the equations defining the cubic Bezier spline. Taking the derivative is well known in the art. Scola teaches taking the derivative of the angle of the local tangent along its length as in 4:6-10, and also taking the derivative of curvature to determine the boundary (see 10:53-61), also 12:31-52, which is clearly taught by Foley at the above-cited page, and which provides motivation. Further, since the tangent is by definition the value of the derivative of a curve at a point (one definition), then using the tangent would be obvious to one of ordinary skill in the art.

Claims 5-6, 12-15, and 17-18 are rejected under 35 U.S.C. 103(a) as unpatentable over Sander/Piper in view of Takazawa as applied to claim 1 above, and further in view of Martinez et al (US 5,319,358)('Martinez').

As to claim 5,

The method as recited in claim 1, wherein identifying a plurality of sets of local extrema comprises determining that a plurality of local extrema are oriented in at least a similar direction.

The relevant sections of the rejection of claim 4 (concerning Foley) are incorporated by reference. Citation of the reference is not required in the instant rejection because a) one of the references cited mentions the specific section of the

Foley reference and b) it would be within the skill and knowledge of one or ordinary skill in the art at the time the invention was made to know and use the cubic Bezier splines and knowledge of their operation would thusly be prima facie a matter of obviousness. As stated earlier, it is well known in the art, as established by the Piper reference, to determine the orientation of the lines that are before and after a point (see the rejection to claim 2, which is herein incorporated by reference). Martinez clearly establishes in the abstract that components in similar directions are adjusted so that they will have the same size, and in 9:40-10:30 that similar adjustments are further made. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sander and Piper with Martinez for the reasons set forth above, and further because Martinez assures ideal scaling in the diagonal direction (Abstract), which would obviously improve the system of Sander and Piper.

As to claim 6, this claim is similar to that of claim 5, the rejection to which is incorporated by reference, except that the plurality of local extrema are oriented in the same direction. This limitation is merely a more specific version of claim 5. That is, it would be obvious that since Piper teaches the use of a tolerance band (e.g. Figure 7), Piper clearly sets forth that since a majority of local extrema (e.g. the "a plurality" recited in the claim) are in the same direction (e.g. points 703, 705, and 707 versus the minority of points 704 and 706), point 705 is chosen as the representative middle point (7:40-56). Clearly, local extrema 703 and 707 fall within the tolerance band and indeed define it, such that they are also part of the extrema run as set forth in the claim even though this is not explicit. It would have been obvious to do so in order to determine the correct

position of the extrema point taken as representative of the extrema run for the reasons set forth above (e.g. implementing majority rules functionality in such a scenario would be the easiest to implement from a software perspective (Occam's razor applies here)). Motivation and combination are also incorporated by reference from claim 5. Sander clearly teaches that local extrema are determined by measuring the change in position of local extrema, so that supports the above position.

As to claim 12,

The preamble is ignored, as explained in the rejection to claim 1 above. Clearly, Piper in Figure 7 identifies consecutive local extrema (703-707), as explained in the rejections above, where a path is clearly an outline. The rejection to claim 5 is incorporated by reference, which explains how the direction of the outline is determined at the points, immediately before and after the selected extrema, and in Sander (7:40-56) and Fig. 7, clearly the extrema are consecutive (e.g. 703-707). The final element of this claim is taught by the rejection to claim 7, wherein Piper has the specified tolerance as set forth, and also the tolerance band is defined around an extrema run, and that is not defined unless a second extrema (e.g. 704) is within the band of a prior one (e.g. 703) or the like. Lastly, the extrema in Piper clearly constitute first and second consecutive local extrema on the path / outline as in Figure 7.

As to claim 13, see the rejection to claims 3 and 11, which are incorporated by reference.

As to claim 14, see the rejection to claim 2, which is incorporated by reference.

As to claim 15, the same logic applies – further, Piper teaches that an extrema run is defined where consecutive extrema fall within the tolerance band, and further than an extrema is defined with respect to the points around, which clearly means that a second local extrema would be determined in the same manner as the first. The rejection to claim 2 is incorporated by reference.

As to claim 17, this is the same limitation as claim 5 above, and the parent rejection and the rejection to claim 5 are herein incorporated by reference.

As to claim 18, this is the same limitation as claim 8, and the parent rejection and the rejection to claim 8 are herein incorporated by reference.

Claim 9 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander/Piper in view of Takazawa as applied to claims 7 and 8 above, the rejections to which are herein incorporated by reference, in view of Lewis et al (US 4,696,707)('Lewis').

As to claim 9,

The method as recited in claim 7, wherein determining that each local extremum in a plurality of local extrema is within a specified tolerance of immediately adjacent local extrema comprises determining that each local extremum in a plurality of local extrema is within specified angle tolerance of immediately adjacent local extrema.

This claim is a duplicate of claim 8 with the slight difference that the tolerance band is defined as an angle tolerance rather than a generic 'specified distance'. The system of Lewis utilizes a tolerance band (like that of Piper) that is based on angle tolerance rather than distance per se (see 13:50-67) in a computer program for

determining such things. This proves that the use of angle tolerances is old and well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the systems of Piper and Sander with Lewis, because the use of angle tolerances are old and well known in the art, and Piper clearly teaches the use of Bezier curves in column 2, where those curves are known to consist of control points, which generate tangent functions, as is well known in the art (see the cited pages of Foley for proof of that), which are used to determine points of change based on the derivative – and a local extremum will clearly have a change in direction, as set forth in the previous rejections. Takazawa teaches the use of control points as above.

Claim 15 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander/Piper in view of Takazawa and Martinez as applied to claim 12 above, and further in view of Scola et al (US 6,714,679 B1) and Foley – as cited in Piper 2:20-25 (copies of the requisite pages are included).

A cubic Bezier spline is known in the art to consist of four control points (see Piper Fig. 1 and 2:10-25. These control points are then used to generate a curved line that consists of, and is representative of, three parametric cubic functions (see for example Foley 11.2, page 479). These cubic functions prima facie are of a higher order than 1, e.g. they have derivatives. Indeed, Foley on page 479 sets forth the parametric tangent vectors of the curves, which are prima facie the derivatives of the equations defining the cubic Bezier spline. Taking the derivative is well known in the art. Scola

teaches taking the derivative of the angle of the local tangent along its length as in 4:6-10, and also taking the derivative of curvature to determine the boundary (see 10:53-61), also 12:31-52, which is clearly taught by Foley at the above-cited page, and which provides motivation. Further, since the tangent is by definition the value of the derivative of a curve at a point (one definition), then using the tangent would be obvious to one of ordinary skill in the art. Takazawa teaches the use of control points as above.

Claim 18-19 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander/Piper in view of Takazawa and Martinez as applied to claim 12 above, the rejections to which are herein incorporated by reference, in view of Lewis et al (US 4,696,707)('Lewis').

As to claims 18-19,

As to claims 18 and 19,

The method as recited in claim 12, wherein determining that the local extremum is within a specified tolerance of the control point off of the outline comprises determining that the local extremum is within a specified angle tolerance of the control point.

This claim is a duplicate of claim 8 with the slight difference that the tolerance band is defined as an angle tolerance rather than a generic 'specified distance'. The system of Lewis utilizes a tolerance band (like that of Piper) that is based on angle tolerance rather than distance per se (see 13:50-67) in a computer program for determining such things. This proves that the use of angle tolerances is old and well known in the art. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine the systems of Piper, Martinez, and Sander with Lewis, because the use of angle tolerances are old and well known in the art, and Piper clearly teaches the use of Bezier curves in column 2, where those curves are known to consist of control points, which generate tangent functions, as is well known in the art (see the cited pages of Foley for proof of that), which are used to determine points of change based on the derivative – and a local extremum will clearly have a change in direction, as set forth in the previous rejections. Corona further teaches the use of control points as specified above.

Claims 1-3, 7-8, 10-11, and 20-23 are rejected under 35 USC 103(a) as unpatentable over Sander in view of Piper and Corona (US 6,992,671 B1).

Claim 20 is a computer program product implementing the method of claim 1. Clearly, software implementing a method that clearly is intended to be computer-implemented is subject to the same rejection without further comment. Therefore, since the references applied teach a computer-implemented method that would be inherently taught by those references. Finally, it would be obvious that a software program for making a computer execute a set of instructions is very clearly running on such a digital computer.

As to claims 1 and 20,

In a computing system that has access to a set of control points defining an outline of a graphical object, a method for simplifying the control data that represents the outline of the graphical object, the method comprising: (Again, preamble given no patentable

weight, since it only recites an intended use – see specifics in *Hirao* as cited above. Preamble is not given patentable weight, since it only recites a summary of the claim and/or an intended use, and the process steps and/or apparatus components are capable of standing on their own; see Rowe v. Dror, 112 F.3d 473, 42 USPQ2d 1550 (Fed. Cir. 1997), Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999), and the like.*)*

-Identifying a plurality of local extrema on the outline of the graphical object; (Sander 2:20-57, where clearly the process identifies local extrema)(Piper clearly teaches that local extrema – e.g. corners – are identified (1:30-47) so that straight line segments are identified)

-Identifying a plurality of sets of local extrema, each local extremum in a set of local extrema being on a common edge of the outline of the graphical object, each set of local extrema including one or more local extremum from the plurality of identified local extrema; (Sander 2:20-57, where clearly these extrema are identified, and a path with local extrema is shown in Fig. 4 (see 4:10-15), see also 5:30-45. In 5:45-6:30, particularly 6:10-30, the groups of extrema are divided by the process into smaller sets (e.g. a curve segment with local extrema is subdivided into multiple segments and this sort of thing, where clearly a curve segment constitutes a 'common edge of the outline of a graphic object,' since the object is defined by an outline, as in Fig. 4.) Further, these clear constitute a plurality of sets – e.g. the curve segments that make up the object are a plurality of objects, and these objects clearly have local extrema, and they are segmented accordingly, which clearly creates the recited plurality of sets of local

extrema, since each set is subdivided after finding local extrema, which prima facie means that the parent sets must have contained a plurality of local extrema. Further, in Figure 7 and 7:40-57, it is clearly taught that a plurality of local extrema can exist within one segment and very clearly only one extrema is selected as representative since the multiple extrema fall within the user-defined tolerance band)(Also, Sander 6:38-52 clearly teaches that the number of points within a line segment is a design choice, which clearly means that multiple extrema can be included per set)

-Determining that control points interspersed between and/or at the local extremum of each set of local extrema are on a common edge of a simplified outline including when the control points are off of the outline of the graphical object; and (Piper clearly teaches the identification of control points on straight-line segments – see Figure 2, where the shown affine spline has two control points 15 and 16 that lie on the spline between end points 13 and 14 that are clearly extraneous and could be eliminated –see 2:25-40.)(Corona clearly teaches that fonts can be stored using font factoring compression techniques, where removing redundant information is useful to create more compact fonts (2:5-15, 3:14-30) where it clearly specifies that Bezier curves are defined by having a control point off of the outline. Next, a character of a font can consist of two types, as illustrated in Figures 4 and 5. Figure 4 shows a character made of single and double type quads (as defined in 3:14-30) as explained in 8:17-43, with the second type being Figure 5, where the curve is defined by cubic Bezier curves consisting of nodes and handles (8:44-57). Now, the best example character is illustrated in Figure 6, where control points 78a, 78b represent control points for double

quad curve 76a, and several other single quads and the like, described in 8:58-9:6. The point of the matter is that the control points of the various characters constitute single points upon which the compression process operates. These control points are necessary to define the curves, and they are **not** on the path)

-Generating simplified control data that represents an outline of the common edges of a simplified graphical object of the graphical object. Piper Figure 9 teaches that segments are evaluated and that where straight-line segments exist – e.g. the degenerated curves in Figure 6 for example – the intermediate control points are removed – see step 53, while for non-degenerated curved segments the intermediate control points are retained – step 52. As an example, see 2:40-60, where Figure 3 is discussed, where certain of the curved line segments have degenerated into straight line segments and as such, the intermediate control points are suitable to be removed. Clearly, this represents 'simplified control data' since the unnecessary curves are removed – see Abstract and 1:30-48.)(Sander Figure 7 clearly shows that multiple extrema can be within a tolerance band such that one is chosen as representative and the others are eliminated as extraneous – see 4:15-20 and 7:40-57)(Corona clearly teaches in Figure 6, 8:55-9:20, and the like that the control points that are not on the path are operated upon by the compression algorithm one at a time, not as representative of the entire curve or the like. In other words, they are operated upon in order as the character is compressed, and prima facie the compressed data is simplified since redundancies have been removed)

Reference Sander teaches some of the limitations of the instant claim as set forth above, with the exception of certain details concerning how redundant control points are removed, which Piper teaches. The references are obviously analogous art since they are both directed to removing redundant control points from graphical objects as set forth in the instant claim. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sander with Piper since Piper creates a file format with the reduced number of control points and splines, which clearly takes less memory than the standard files, which would obviously be an improvement of Sander (See Piper abstract, 1:30-45 for example). However, neither of the references expressly teaches the limitation concerning the control points being outside the path. Sander does teach that fonts are made of curves and that these curves have control points, but Sander creates intermediate paths and does not expressly discuss how the control points are used.

The Corona reference clearly shows that while fonts are made of paths, the control points are critical to how a font is compressed, where the compression process clearly consists of removing redundant information (as discussed above). Therefore, in light of the teachings of the Corona reference, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sander in light of the teachings of Corona to include the control points as part of the path calculations and approximations, since processing the control points results in a higher efficiency and these font factoring techniques are known to reduce redundancy and created a more compact font.

As to claim 2,

The method as recited in claim 1, wherein identifying a plurality of local extrema on the outline of the graphical object comprises determining that the outline increases or decreases in the same direction at points adjacent to a point that is a prospective local extremum.

The Sander reference teaches this limitation in 2:10-40, where a local extrema is clearly defined to be a point in a curve with vertical or horizontal slope having portions of the path before and after the point positioned on the same side of a line tangent to the point. Clearly, this meets the recited definition, and it would have been obvious to find local extrema this way, because an extrema is by nature indicated by a change in direction of a curve as specified above. Since only the primary reference is utilized, motivation and combination is incorporated from the rejection to the parent claim.

As to claim 3,

The method as recited in claim 1, wherein identifying a plurality of local extrema on the outline of the graphical object comprises identifying a plurality of local extrema on the outline of a typographical character.

In Sander 1:40-45, a piece of software is listed as being able to generate paths. That piece of software is Aldus® Fontographer, which is well known to one of ordinary skill in the art to be software that allows a user to create fonts, which clearly consist of typographical characters, and the outline of such a character is essentially what a TrueType™ font or an Adobe Postscript Type 1 font consists of – that is, control points that define splines for the outline and fill of such a character. Piper clearly teaches in

1:10-25 the example of the letter "A" for reduction in the number of control points required, which is clearly an outline of a typographical character. Both references therefore teach this limitation. Motivation and combination are taken from the rejection to the parent claim.

As to claim 7,

The method as recited in claim 1, wherein identifying a plurality of sets of local extrema comprises determining that each local extremum in the plurality of local extrema is within a specified tolerance of immediately adjacent local extrema.

Piper teaches the use of a tolerance band (e.g. Figure 7), Piper clearly sets forth that since a majority of local extrema (e.g. the "a plurality" recited in the claim) are in the same direction (e.g. points 703, 705, and 707 versus the minority of points 704 and 706), point 705 is chosen as the representative middle point (7:40-56). Motivation and combination are incorporated by reference from the parent rejection.

As to claim 8,

The method as recited in claim 7, wherein determining that each local extremum in a plurality of local extrema is within a specified tolerance of immediately adjacent local extrema comprises determining that each local extremum in a plurality of local extrema is within specified distance tolerance of immediately adjacent local extrema.

As stated in the rejection to claim 7 above, and as substantiated in Piper 7:40-56, local extrema must fall within a tolerance band **of each other** as shown in Figure 7 to constitute an "extrema run" as defined in terms of distance. Clearly, this meets the required definition (e.g. the specification sets forth that 704-706 are extrema run

between 703 and 707, although a close look at Figure 7 will show very clearly that all five points **fall within the tolerance band**. Therefore, it is obvious that 704 is within a tolerance band of 703, and that is what triggered the extrema run classification. The rejection to claim 7 is herein incorporated by reference for motivation and combination.

As to claim 10,

The method as recited in claim 1, wherein generating simplified control data that represents an outline of the common edges of the graphical object comprises generating a reduced set of control points, the reduced set of control points representing the features of the outline without representing some variations that would otherwise be included in the outline.

Clearly, Piper teaches that various control points within an extrema run / tolerance band are eliminated as redundant, as set forth above in the rejections to claims 7, 8, and 9 and the like. Clearly, in Figure 7, if elements 704 and 706 are eliminated and only extrema 705 is retained, then these clearly constitute "variations that would otherwise be included in the outline" that are eliminated because the points are not exactly the same as the retained representative (middle) control point. Motivation and combination are taken from the parent rejection.

As to claim 11,

The method as recited in claim 1, wherein generating simplified control data that represents an outline of the common edges of the graphical object comprises generating simplified control data that represents an outline of the common edges a typographical character.

The rejection to claim 3 is incorporated herein by reference. Clearly, as stated therein, the paths recited can be a typographic character. The claim is essentially a duplicate. The rejection to claim 7 is also incorporated by reference, since it teaches eliminating control points and generating a simplified output format (see also the rejection to claim 1).

As to claim 21, Corona clearly teaches generating hinting instructions, since the hints are an integral part of font factorization (see 2:5-65, particularly 2:50-65). Therefore the hinting information will prima facie be generated with the compressed font (7:15-30), which therefore must comprise translating the instructions into hinting data (and as such this would be obvious).

As to claim 22, Corona specifically groups common letters and characters together into subgroups as part of compression, as does Sander. Corona is aware of the nature of the character being rendered (e.g. what sub-parts such as serifs and stems) that it has such that both the user and the system can be aware of what characters are rendered. Also, allowing the user to see the characters constitutes ' facilitating recognition'. Finally, the compression process utilized by Corona groups characters into groups based on commonality which facilitates recognition.

As to claim 23, Corona specifically generates groups that contain the various characters that have common characteristics. The knowledge of this allows for better compression techniques to be applied (e.g. Huffman coding) and it allows the control points to be acted upon consecutively in non-common curve areas as discussed above.

Claims 12-15 are rejected under 35 USC 103(a) as unpatentable over Sander, Pieper, and Corona as applied to claim 1 above, and further in view of Martinez.

As to claim 12,

In a computing system that has access to a set of control points representing an outline of a graphical object, a method for determining that a local extremum and a control point off of the outline of the graphical object are on a common edge of a simplified outline, the method comprising: (Preamble is not given patentable weight, since it only recites a summary of the claim and/or an intended use, and the process steps and/or apparatus components are capable of standing on their own; see Rowe v. Dror, 112 F.3d 473, 42 USPQ2d 1550 (Fed. Cir. 1997), Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999), and the like.)

-Identifying consecutive local extremum on the outline and control point off of the outline; (Sander 2:20-57, where clearly the process identifies local extrema; Sander 6:58-7:40, where consecutive extremum are identified)(Piper clearly teaches that local extrema – e.g. corners – are identified (1:30-47) so that straight line segments are identified)(Corona clearly identifies consecutive control points that are not on the curve. Corona clearly teaches that fonts can be stored using font factoring compression techniques, where removing redundant information is useful to create more compact fonts (2:5-15, 3:14-30) where it clearly specifies that Bezier curves are defined by having a control point off of the outline. Next, a character of a font can consist of two types, as illustrated in Figures 4 and 5. Figure 4 shows a character made of single and double type quads (as defined in 3:14-30) as explained in 8:17-43, with the second type

being Figure 5, where the curve is defined by cubic Bezier curves consisting of nodes and handles (8:44-57). Now, the best example character is illustrated in Figure 6, where control points 78a, 78b represent control points for double quad curve 76a, and several other single quads and the like, described in 8:58-9:6. The point of the matter is that the control points of the various characters constitute single points upon which the compression process operates. These control points are necessary to define the curves, and they are **not** on the path)(Martinez clearly establishes in the abstract that components in similar directions are adjusted so that they will have the same size, and in 9:40-10:30 that similar adjustments are further made)

-Determining that the direction of the outline at both the consecutive local extremum and control point off of the outline is at least a similar direction; and (Sander teaches that the path is tested and if the direction is not the same (e.g. there is an angle variance greater than some value and/or the tolerance band, that the path is subdivided there to an approximate form; this would constitute testing the consecutive local extremum to assure that they are in the same direction, just as the use of the tolerance band (e.g. for items that are within a certain distance and direction of each other (tolerance band in Figures 2 and 4 for example) (Sander 2:20-57, where clearly these extrema are identified, and a path with local extrema is shown in Fig. 4 (see 4:10-15), see also 5:30-45. In 5:45-6:30, particularly 6:10-30, the groups of extrema are divided by the process into smaller sets (e.g. a curve segment with local extrema is subdivided into multiple segments and this sort of thing, where clearly a curve segment constitutes a 'common edge of the outline of a graphic object,' since the object is defined by an

outline, as in Fig. 4.) Further, these clear constitute a plurality of sets – e.g. the curve segments that make up the object are a plurality of objects, and these objects clearly have local extrema, and they are segmented accordingly, which clearly creates the recited plurality of sets of local extrema, since each set is subdivided after finding local extrema, which prima facie means that the parent sets must have contained a plurality of local extrema. Further, in Figure 7 and 7:40-57, it is clearly taught that a plurality of local extrema can exist within one segment and very clearly only one extrema is selected as representative since the multiple extrema fall within the user-defined tolerance band)(Also, Sander 6:38-52 clearly teaches that the number of points within a line segment is a design choice, which clearly means that multiple extrema can be included per set)(Corona teaches the use of control points not on the path and that they are processed)

-Determining that the local extremum is within a specified tolerance of the control point off of the outline. (Sanders clearly teaches in Figure 7 the use of a tolerance, as well as the Abstract, 2:10-30, and specifically for Figure 7, 7:40-60, where the tolerance band is defined, and the local extremum is determined to be within a specified tolerance.).

In Sander (7:40-56) and Fig. 7, clearly the extrema are consecutive (e.g. 703-707). The final element of this claim is taught by the rejection to claim 7, wherein Piper has the specified tolerance as set forth, and also the tolerance band is defined around an extrema run, and that is not defined unless a second extrema (e.g. 704) is within the

band of a prior one (e.g. 703) or the like. Lastly, the extrema in Piper clearly constitute first and second consecutive local extrema on the path / outline as in Figure 7. Motivation and rationale for combining Sander, Piper, and Corona is taken from the rejection of claim 1 above.

The relevant sections of the rejection of claim 4 (concerning Foley as cited in Piper 2:20-25) are incorporated by reference. Citation of the reference is not required in the instant rejection because a) one of the references cited mentions the specific section of the Foley reference and b) it would be within the skill and knowledge of one or ordinary skill in the art at the time the invention was made to know and use the cubic Bezier splines and knowledge of their operation would thusly be prima facie a matter of obviousness. As stated earlier, it is well known in the art, as established by the Piper reference, to determine the orientation of the lines that are before and after a point (see the rejection to claim 2, which is herein incorporated by reference). Martinez clearly establishes in the abstract that components in similar directions are adjusted so that they will have the same size, and in 9:40-10:30 that similar adjustments are further made. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sander and Piper with Martinez for the reasons set forth above, and further because Martinez assures ideal scaling in the diagonal direction (Abstract), which would obviously improve the system of Sander and Piper.

As to claim 13, see the rejection to claims 3 and 11, which are incorporated by reference.

As to claim 14, see the rejection to claim 2, which is incorporated by reference.

As to claim 15, the same logic applies – further, Piper teaches that an extrema run is defined where consecutive extrema fall within the tolerance band, and further than an extrema is defined with respect to the points around, which clearly means that a second local extrema would be determined in the same manner as the first. The rejection to claim 2 is incorporated by reference.

As to claim 17, this is the same limitation as claim 5 above, and the parent rejection and the rejection to claim 5 are herein incorporated by reference.

As to claim 18, this is the same limitation as claim 8, and the parent rejection and the rejection to claim 8 are herein incorporated by reference.

Claim 9 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander in view of Piper as applied to claims 7 and 8 above, the rejections to which are herein incorporated by reference, in view of Lewis et al (US 4,696,707)('Lewis').

As to claim 9,

The method as recited in claim 7, wherein determining that each local extremum in a plurality of local extrema is within a specified tolerance of immediately adjacent local extrema comprises determining that each local extremum in a plurality of local extrema is within specified angle tolerance of immediately adjacent local extrema.

This claim is a duplicate of claim 8 with the slight difference that the tolerance band is defined as an angle tolerance rather than a generic 'specified distance'. The system of Lewis utilizes a tolerance band (like that of Piper) that is based on angle tolerance rather than distance per se (see 13:50-67) in a computer program for

determining such things. This proves that the use of angle tolerances is old and well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the systems of Piper and Sander with Lewis, because the use of angle tolerances are old and well known in the art, and Piper clearly teaches the use of Bezier curves in column 2, where those curves are known to consist of control points, which generate tangent functions, as is well known in the art (see the cited pages of Foley for proof of that), which are used to determine points of change based on the derivative – and a local extremum will clearly have a change in direction, as set forth in the previous rejections. Also, note that Corona teaches the use of control points, so that addition makes no difference as per the rejection to claims 1, 7, and 8 above.

Claim 15 is rejected under 35 U.S.C. 103(a) as unpatentable over Sander in view of Piper, Corona, and Martinez as applied to claim 12 above, and further in view of Scola et al (US 6,714,679 B1) and Foley – as cited in Piper 2:20-25 (copies of the requisite pages are included).

A cubic Bezier spline is known in the art to consist of four control points (see Piper Fig. 1 and 2:10-25. These control points are then used to generate a curved line that consists of, and is representative of, three parametric cubic functions (see for example Foley 11.2, page 479). These cubic functions prima facie are of a higher order than 1, e.g. they have derivatives. Indeed, Foley on page 479 sets forth the parametric tangent vectors of the curves, which are prima facie the derivatives of the equations

defining the cubic Bezier spline. Taking the derivative is well known in the art. Scola teaches taking the derivative of the angle of the local tangent along its length as in 4:6-10, and also taking the derivative of curvature to determine the boundary (see 10:53-61), also 12:31-52, which is clearly taught by Foley at the above-cited page, and which provides motivation. Further, since the tangent is by definition the value of the derivative of a curve at a point (one definition), then using the tangent would be obvious to one of ordinary skill in the art.

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as unpatentable over Sander in view of Piper, Corona, and Martinez as applied to claim 12 above, the rejections to which are herein incorporated by reference, in view of Lewis et al (US 4,696,707)('Lewis').

As to claims 18 and 19,

The method as recited in claim 12, wherein determining that the local extremum is within a specified tolerance of the control point off of the outline comprises determining that the local extremum is within a specified angle tolerance of the control point.

This claim is a duplicate of claim 8 with the slight difference that the tolerance band is defined as an angle tolerance rather than a generic 'specified distance'. The system of Lewis utilizes a tolerance band (like that of Piper) that is based on angle tolerance rather than distance per se (see 13:50-67) in a computer program for determining such things. This proves that the use of angle tolerances is old and well known in the art. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine the systems of Piper, Martinez, and Sander with Lewis, because the use of angle tolerances are old and well known in the art, and Piper clearly teaches the use of Bezier curves in column 2, where those curves are known to consist of control points, which generate tangent functions, as is well known in the art (see the cited pages of Foley for proof of that), which are used to determine points of change based on the derivative – and a local extremum will clearly have a change in direction, as set forth in the previous rejections.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

February 6, 2006

UChauhan

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SUPERVISORY PATENT EXAMINER